DOER report

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The Commonwealth of Massachusetts

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State Heating Oil & Propane Program Final Report Winter 2002/2003

Division of Energy Resources

Commonwealth of Massachusetts

Office of Consumer Affairs and Business Regulation

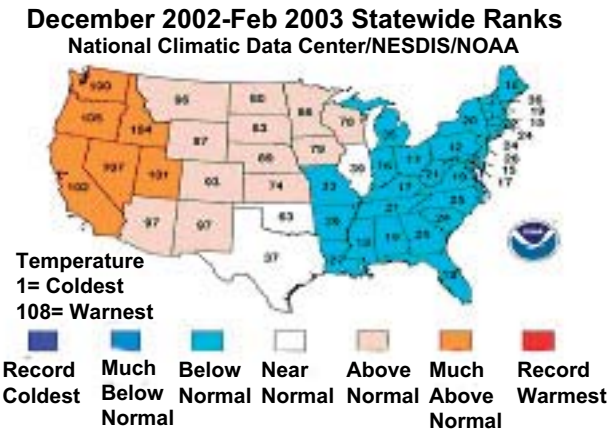
Introduction

During the 2002/03 heating season, the Massachusetts Division of Energy Resources (DOER) participated in the U.S. Department of Energy's *State Heating Oil and Propane Program* (SHOPP). The purpose of the program is to collect and monitor retail heating oil and propane prices from October through March. This program augments existing DOER data collection efforts and serves several important purposes. The information provides policy-makers with timely, accurate and consistent data to monitor current heating oil and propane markets and develop, when necessary, appropriate state responses to potential fuel problems. The information also helps the federal and state governments respond to consumer, congressional and media inquiries regarding heating oil and propane.

Highlights

- ***Below normal temperatures throughout the East Coast and Mid-West.***
- ***Political unrest abroad pushed crude prices higher compared to last year.***
- ***High retail demand put pressure on inventories for winter fuels.***
- ***Winter fuels experience price spikes.***
- ***SHOPP data used to support DOER activities.***

Figure 1



The following report summarizes the results from the Massachusetts retail heating oil and propane price surveys. It includes a synopsis of events that affected supply and demand in those markets. A seasonal overview and summary of DOER's use of SHOPP program information is also provided.

➢ *Below Normal Temperatures throughout East Coast and Mid-West*

As in any heating season, a major variable effecting heating fuel prices is the weather. One reason to monitor temperatures (*in terms of heating degree-days*) is colder weather creates higher demand for heating fuels. Higher demand coupled with low inventories and/or supply disruptions can cause higher heating fuel prices.

Unlike the previous winter, the winter of 2002/03 was eventful in New England. Early season forecasts called for normal winter weather. However, as the winter progressed, seasonal temperatures across the nation were below normal for the East Coast, the Mid-West and the Southeast.

Figure 1 shows the winter temperatures across the United States. In Boston, Massachusetts, temperatures were 30 percent colder than last year and 9 percent colder than normal[1]. According to National Oceanic and Atmospheric Association (NOAA), this winter was the 15th coldest and 6th snowiest in Boston. Additionally, Boston set a new record for the greatest snow storm snowfall total on February 17-18, 2003 (the President's Day Snowstorm). A total of 27.5 inches of snow fell breaking the previous record of 27.1 inches set in February 1997. The storm also set a new record for the snowiest February on record with a total of 41.6 inches breaking the previous record of 41.3 inches set in 1969.

➢ *Political Unrest Abroad Pushed Crude Prices Higher Compared to Last Year*

This heating season began with higher heating fuel inventories, and lower crude oil and natural gas prices compared to last year. Nevertheless, concerns about the political unrest in Venezuela and war with Iraq raised expectations of crude oil and petroleum product supply disruptions and thus higher prices. Therefore, state energy offices expected higher retail prices and demand for space-heating fuels compared to last winter.

Beginning in December 2002, Venezuela, the world's fifth largest oil producer, experienced a general strike aimed at forcing earlier presidential elections. The strike adversely effected its oil production. Production dropped from 3 million barrels a day to 627,000 barrels a day. As Venezuela's number one customer, this was bad news for the United States. According to the Energy Information Agency (EIA), the spot price of West Texas Intermediate (WTI)[2] crude oil rose from around $27 per barrel prior to the Venezuelan strike to over $30 per barrel by mid-December, and stayed above that level through most of the winter[3]. Though the strike ended by the beginning of February, Venezuelan oil imports did not begin to rebound until the end of the month.

Additionally, worries about war with Iraq helped keep crude oil prices high. In 2002, the United States imported approximately 2.3 percent of its petroleum from Iraq.[4] Though OPEC pledged to increase oil production in response to oil shortfalls caused by the Venezuelan strike and concerns about

[1] EIA Winter Weather Summary 2002-2003
[2] WTI crude oil price is a benchmark used to track trends in U.S. crude oil prices.
[3] US DOE/EIA "This Week in Petroleum", February 12, 2003, www.doe.eia.gov

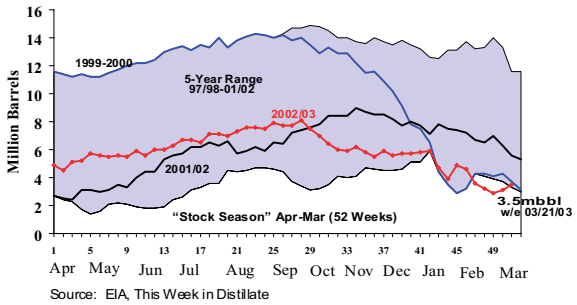
Iraq, some oil refiners continued to buy crude oil at high prices, fearing that prices might rise even higher in subsequent weeks.

As a result of these events, the average spot price per barrel of WTI crude oil in October 2002 was $29, compared to $21 in October 2001. The WTI oil seasonal average was $31 per barrel compared to last season's $21 average. (Generally, a $1 per barrel increase in crude oil translates into a $0.025 per gallon increase for petroleum products.)

➢ *High Demand Put Pressure On Inventory Levels For Winter Fuels*

Massachusetts accounts for 36 percent of the heating oil sold in New England. Approximately 40 percent of homes in Massachusetts heat with heating oil. Therefore having heating oil inventories located within the region is important because they provide a buffer in times when demand is high.

Figure 2
Weekly New England Heating Oil Stocks



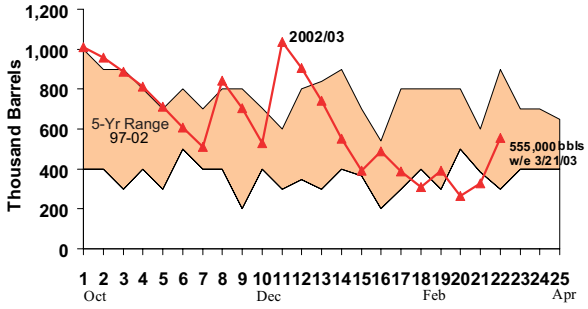
Source: EIA, This Week in Distillate

New England heating oil inventories at the start of the heating season were nearly 21 percent above the record low inventory level set the previous October. However, as the winter progressed and temperatures across the East Coast remained below normal, demand increased and stocks began to fall. Ultimately, stocks fell below the five-year average by the end of the season. Figure 2 illustrates stock movement over the past year.

Propane is another fuel used for space heating.[5] Sales of propane in New England account for approximately 9 percent of total East Coast sales, with sales in Massachusetts accounting for 16 percent of total New England sales. Nearly 3 percent of homes in Massachusetts heat with propane.

In the Northeast, propane demand is highly seasonal. Its price is influenced by several factors including weather, inventory levels, and the price of crude oil and natural gas. As previously mentioned, crude oil prices were considerably higher than last year when mild weather and strong natural gas inventories suppressed prices.

Figure 3
Weekly New England Propane Stocks



Source: EIA, This Week In Propane

As the heating season began, propane stocks on the East Coast were more than sufficient to meet demand and thus helped contribute to lower prices. However, as the season progressed, demand increased and stocks declined. Figure 3 shows inventories were within the normal range for most of the season, but dipped below and then ended the season within the 5-year average.

[4] US EIA Petroleum Imports 2002

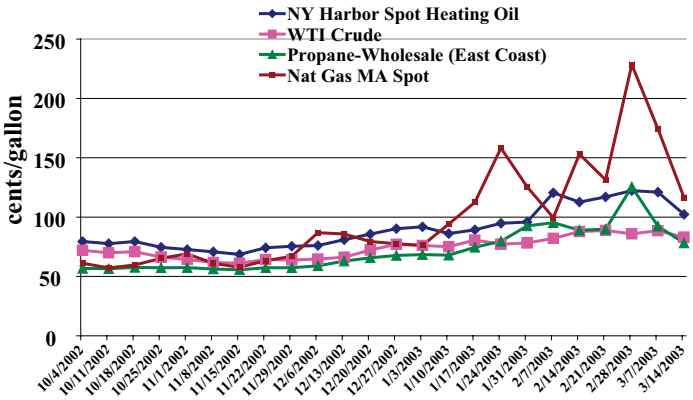
[5] Propane is a gas that is produced as a by-product of natural gas processing and petroleum refining.

Natural gas stocks also experienced severe demand drawdowns during this winter season. Last winter warm weather and below normal demand helped maintain high natural gas supplies heading into the 2002 summer. On the national level, natural gas stocks were depleted throughout the summer caused by warmer-than-normal weather throughout the southern and western United States. According to the Northeast Gas Association (NEGA), the season began with natural gas storage at higher-than-normal levels and ended with the lowest storage levels in a decade[6].

➢ *Winter Fuels Experience Price Spikes*

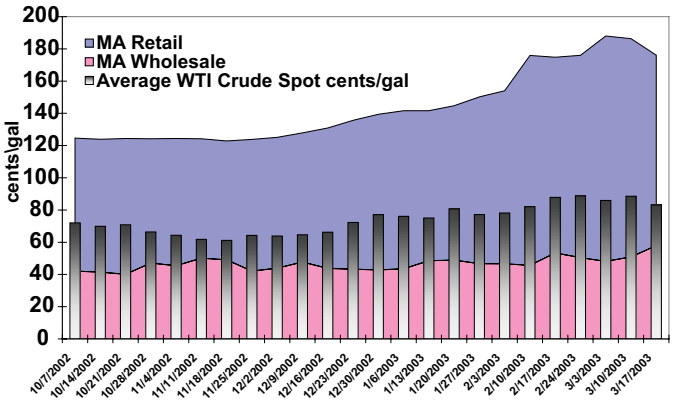
Wholesale heating fuel prices directly relate to retail prices[7]. As previously mentioned, crude oil prices affect petroleum and natural gas wholesale prices. DOER also notes that last season's strong natural gas inventories and unseasonable warm weather suppressed natural gas prices and kept dual fuel customers from switching. This season, higher natural gas prices triggered fuel switching which also influenced wholesale and retail heating oil prices. Figure 4 shows the progression of prices for the competing winter fuels during the season October 2002 to March 2003.

Figure 4
Crude, Heating Oil, Propane & Natural Gas Wholesale Price Comparison 2002/03



The following closely examines wholesale and retail prices for specific heating fuels.

Figure 5
Wholesale & Retail Prices for No. 2 Heating Oil in MA



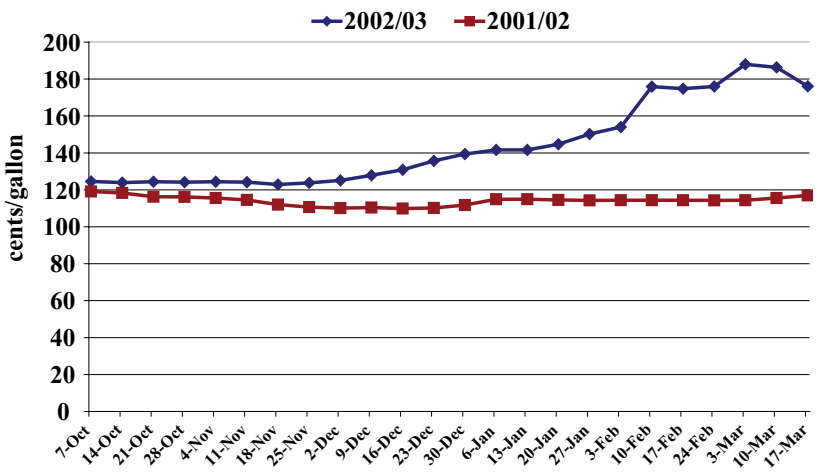
This season's colder-than-normal weather helped drive up demand which led to lower stocks. Almost as soon as fuel shipments arrived at terminals, fuel dealers used it to satisfy demand. High demand plus low stocks results in higher prices. Heating oil, propane, and natural gas prices ended the winter season well above last year's levels.

In addition to colder-than-normal temperatures, high crude prices persisted through the season affecting wholesale heating oil prices and translating into higher average retail prices. The average wholesale price in MA for the season was $0.98 per gallon and the average wholesale to retail mark-up per gallon was $0.51, but varied 294 percent between a low of $0.40 cents and a high of $1.58. Figure 5 shows MA retail prices compared to MA wholesale prices and crude oil during the 2002/03 season.

[6] NEGA, "New England Natural Gas Market Update," March 2003, pg. 1.
[7] This section deals with prices. When consumption is factored in, consumers paid more than just the percentage increase in price.

The average retail price per gallon of heating oil in October 2002 was $1.24, compared to $1.18 in October 2001. The high and low price, respectively, of the 2002/03 winter was $1.88 per gallon compared to $1.20 the previous year and $1.22 compared to $1.10. Figure 6 shows that last season's prices were stable while this season prices started out stable but experienced price spikes later in the heating season. Overall, this winter's prices were comparably higher, averaging 27 percent more than last season. ***The average price per gallon for the winter 2002/03 was $1.45 compared to $1.14 last year.***

Figure 6
MA Weekly Retail Heating Prices

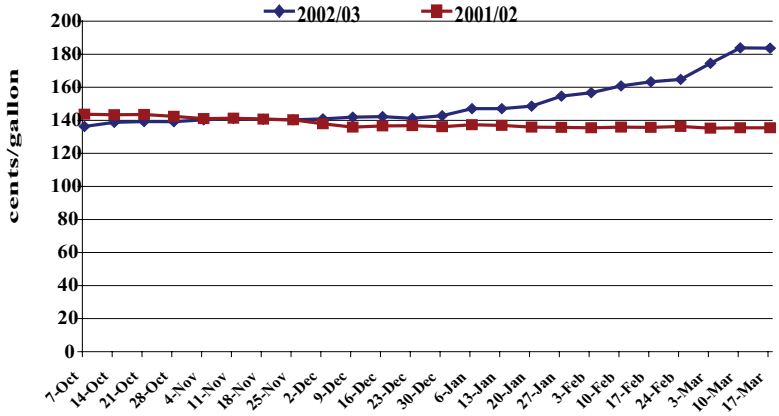


Source: 2003 DOER SHOPP Data

On average, Massachusetts heating oil customers spent 27 percent more on their heating bills compared to last winter. Moreover, by the end of this season, prices were 51 percent higher than the previous year.

Cold temperatures, high demand, and high natural gas spot prices impacted propane prices. In October 2002, the average retail price per gallon of propane was $1.37; seven cents lower than the price the previous October. However, as demand surged and stocks fell, prices rose steadily throughout the winter with price spikes occurring in February and March (Figure 7).

Figure 7
Weekly Residential Propane Prices



Source: 2003 DOER SHOPP Data

This winter's propane price averaged 11 percent higher than last season's average. The highest price of the winter was $1.84 per gallon compared to $1.45 last winter and the lowest was $1.36 compared to $1.35. Overall, the high and low differed by 35 percent, compared to last season's 7 percent price spread. ***The average price per gallon for the winter 2002/03 was $1.50 compared to $1.38 last year.***

On average, Massachusetts propane customers spent up to 11 percent more on their heating bills this year compared to last winter. Retail propane prices ended the season 36 percent higher than last year.

In regard to natural gas, wholesale prices also experienced increases due to the high demand caused by colder temperatures. The October 2003 Henry Hub spot price of natural gas averaged $4.38 per million BTU compared to $2.32 per million BTU October 2002[8]. The Henry Hub seasonal average was $7.03 per million BTU compared to last season's $2.37 per million BTU average.

Increases in natural gas wholesale prices do not immediately impact retail prices because over 50 percent of the bill price is fixed. However, based on rate filings by the natural gas companies with the Massachusetts Department of Telecommunications and Energy (DTE), natural gas consumers paid approximately 45 percent more in retail prices for natural gas this season compared to last year.

➢ *SHOPP Data Used to Support DOER Activities*

One of DOER's most important functions is to provide accurate and timely information on energy prices and supplies to the government, media and consumers of the Commonwealth. The SHOPP program's data collection and monitoring activities provides DOER with a valuable tool to carry out this function. DOER is able to provide information to policy-makers about trends in the heating fuels industries. With this information, DOER can also spot potential heating fuels emergencies and notify policy-makers who may need to act quickly to try and alleviate the problem.

Among the uses of the SHOPP information is the New England States' and Energy Industry Weekly Conference Calls. From October through March, DOER's staff participates in weekly conference calls regarding the winter fuels situation. The New England Governors' Conference hosts the calls and participants include energy offices in New England and New York; energy industry representatives including the Northeast Gas Association, ISO-New England; the U.S. Coast Guard, Massachusetts Petroleum Council and the U.S. DOE. Participants exchange data about heating oil, natural gas and electricity winter supplies and prices. These discussions also include status reports on the Northeast Heating Oil Reserve. In past winter seasons, this group has exchanged ideas on alleviating potential energy problems and informed each other of emergency initiatives and consumer education programs in their respective states.

An example of the importance of these calls happened this winter. An extended cold snap in January and February placed significant demands on the distribution system in New England for heating oil, propane and liquid natural gas. The concern was that drivers of trucking companies would not be able to meet the continued high demand. As a result, MA, the other New England states and New York granted waivers to drivers' hours as allowed by the Federal Motor Carrier Safety Regulations Agency. Data gathered through SHOPP as well as communications through the energy calls supported the issuance of these waivers, allowing smooth transportation of the needed fuel supplies. Consumers were also unaware of these potential disruptions in supplies, preventing unwarranted consternation.

DOER also participates in the New England Governors' Power Planning Committee Quarterly Meetings. The New England Governors have made the issues of price and availability of heating fuels a priority item and look upon the Power Planning Committee members for advice on how the New England states can best deal with heating fuel problem situations. SHOPP data helps to provide information for formulating policy at these meetings.

[8] Gas Daily Weekly Updates

Other meetings attended by DOER that utilize SHOPP data include the Massachusetts Department of Housing and Community Development's (DHCD) Energy Advisory Meetings. As part of its duties under its management of the Commonwealth's Weatherization Assistance Program (WAP), DHCD holds quarterly meetings on its weatherization and Low-Income Home Energy Assistance Program (LIHEAP), also known as fuel assistance. As a member of this group, DOER provides information on prices and supplies. DHCD briefs group members on the status of these federal programs including funds, allocations, and number of recipients.

DOER is also a member of the Energy Benefits Task Force. This task force meets throughout the year to develop marketing strategies for energy programs including fuel assistance, energy efficiency and utility discounts programs. Members of this group include gas and electric utilities, consumer advocates, state agencies (mainly DOER and DHCD), and community action agencies. Over the past two seasons, members of the group have developed fuel assistance ad campaigns that ran on local TV and radio stations. Currently, the group is awaiting the final results of an outreach study contracted by the electric utilities to examine impediments to enrolling low-income customers in benefit programs.

SHOPP data is also important to DOER's role providing consumer information. DOER collects and posts pricing information from the SHOPP surveys for heating oil and propane on our website, www.mass.gov/doer. This information is updated weekly and is used by numerous organizations and consumers to measure prices. DOER's website also contains consumer tip sheets for fuel assistance, oil heat contracts, oil heat maintenance, and natural gas.

In addition to our own website, DOER maintains the Commonwealth's **Winterheating.com** website and **Energy7 Hotline**. Started in late 2001, Winterheating.com and the Energy7 Hotline are part of the state's effort to coordinate information on the Commonwealth's Energy Services. Besides DOER, other agencies linked to the Winterheating.com include DHCD, the Department of Telecommunications and Energy (DTE), and the Division of Standards.

Using data compiled through SHOPP, DOER sends a weekly status report to its parent agency, the Massachusetts Office of Consumer Affairs and Business Regulation, outlining major industry news, and the status of heating oil, propane, natural gas prices and inventories. The report is a compilation of DOER surveys, U.S. DOE/EIA reports, and news clippings.

Finally, DOER attended events such as Consumer Day at South Station to hand out tipsheets and materials on energy efficiency (windows, insulation, etc.), electric restructuring, oil heat contracts and maintenance as well as assistance programs.

➢ *Conclusion*

The Division of Energy Resources continues to find this joint data collection program to be an integral part of its consumer energy awareness and energy emergency programs. The consistent collection of data provides an early warning system to key decision-makers. Monitoring trends in the heating oil and propane markets also gave DOER the information necessary to assist consumers in making fuel purchase decisions. Given its continued importance in supporting DOER activities, DOER strongly advocates for the continuation of the SHOPP Program.

Please visit our web site at
http://www.state.ma.us/doer/
Suggestions and comments can be e-mailed to
doer.energy@state.ma.us

The DOER report is a publication of the Commonwealth of Massachusetts Office of Consumer Affairs and Business Regulation, Division of Energy Resources. Suggestions, questions and input are invited. Send to: Reliability Team, DOER, 70 Franklin St. 7th Floor, Boston, MA 02110-1313. Contact DOER staff members at (617) 727-4732.

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